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Biotechnology Notes, a compilation of agency activities, news events, and upcoming meetings, is prepared for members of the U.S. Department of Agriculture's (USDA) Committee on Biotechnology in Agriculture (CBA) by USDA's Office of Agricultural Biotechnology (OAB).

INSIDE USDA

BIOSAFETY PROCEEDINGS TO BE PUBLISHED SOON; JAPAN SELECTED FOR 4TH SYMPOSIUM

Proceedings containing 60 scientific papers presented at the Third International Symposium on the Biosafety Results of Field Tests of Genetically Modified Plants and Microorganisms, held last November in Monterey, CA, will soon go to press and become available for distribution. If you wish to receive a copy, please send a request by fax to USDA's Office of Agricultural Biotechnology (OAB) at 202-720-5336.

Tsukuba Science City, Japan will be the site for the fourth biosafety symposium on July 14-18, 1996, according to Alvin Young, OAB Director and co-organizer of three preceding symposia.

The format of the meeting will center around six panels that will address issues such as agronomic products in the marketplace; emerging capabilities of developing countries; risk assessment; field experience using microorganisms as bioindicators, biosensors, or biomonitor; new research techniques for biosafety evaluations; and international harmonization.

The host institution will be the Japan International Research Center for Agricultural Science. The Director General of the Center, Keiji Kainuma, will chair the meeting. For more information, please write to Akihiro Hino, Deputy Director, Biotechnology Division, Ministry of Agriculture, Forestry and Fisheries, 1-2-1 Kasumigaseki, Chiyoda, Tokyo 100 Japan; or call +81-3-3502-3919; Fax: +81-3-3502-4028; E-mail: akhino@saffrc.go.jp

NEWS AROUND THE NATION (AND THE WORLD)

PANEL OF EXPERTS ON BIOSAFETY CONVENES IN EGYPT

Fifteen international experts met in Cairo, Egypt May 1-5 to prepare a report which considered existing knowledge and experience on risk assessment and management and guidelines and legislation for biosafety of biotechnology products. The expert panel discussed, among other issues, a framework related to biotechnology field testing to prevent any adverse effects on biological diversity. Biological diversity refers to the number and variety of living organisms on the planet.

The Cairo meeting was scheduled by participants at the Conference of the Parties (COP) who met last November in Nassau. There, participants expressed concern about the use of living modified organisms resulting from biotechnology and recommended the formation of an ad hoc group of experts, nominated by Governments, to discuss the issues in greater detail. The Government of the Arab Republic of Egypt invited the panel of experts to meet in Cairo last month. Representing the United States, Canada, and Mexico was Terry Medley, Director of USDA's Biotechnology, Biologics, and Environmental Division and Chairman of the North American Plant Protection Organization.

The Panel concluded that methods for risk assessment are well-defined but the information needs to be more widely disseminated and in more languages. The Panel stressed the importance of risk management measures when modified organisms are transferred to a different environment. In addition, participants said capacity building (having adequate human and physical resources) is essential to ensure implementation of biosafety regulations.

The above recommendations and others will now be passed on to another open-ended ad hoc working group on biosafety which meets in Madrid July 24-28. The outcome of the Madrid meeting will be a report for the consideration of the second COP to "enable the COP to make an informed decision on the need for and modalities of a protocol." For more details about the Cairo meeting or to receive a copy the report, please write to Kalemani J. Mulongoy, UN Environment Programme, 15, chemin des Anemones, CP 356, CH-1219 Chatelaine, Geneva, Switzerland; or call 41-22-979-9362; Fax: 41-22-797-2512; E-mail: K.mulongoy@UNEP.ch

CALGENE TOMATO HEADED NORTH

The FlavrSavr tomato developed by Calgene of Davis, CA will soon be sold in Canada, according to the April 15 issue of the *AgBiotech Bulletin*. Calgene recently received approval from Health Canada to import, advertise and sell the tomato, which is marketed

better and last longer than other tomatoes. The approval did not include permission to grow the tomato in Canada.

BIOTECHNOLOGY ON CAMPUS

This is the fifth in a series of articles profiling agricultural biotechnology programs at U.S. colleges and universities. This month we visit the University of Arizona's College of Agriculture at Tucson.

The College of Agriculture, University of Arizona, recently moved into a new 8-story, 130,000 square foot laboratory/office building designed to accommodate state-of-the-art science efforts in plant and insect biology. The building is occupied by faculty from the Departments of Plant Sciences, Plant Pathology and Entomology. More than 15 recently hired faculty in these departments are using the tools of molecular biology to study plant host-pathogen relationships, cell structure and function, gene expression, how variation in genotype is translated into phenotypic variation, genetic regulation of plant cell development and differentiation, the molecular basis of microbial gene regulation in the rhizosphere, insecticide resistance, and numerous other factors regulating plants and insects.

Faculty are able to access the University's Biotechnology Core Program which offers services in macromolecular structure (sequence analysis and synthesis of proteins, peptides and DNA); molecular design (computer graphics for displaying molecular structures); cell sorting; electron microscopy; and biomolecular characterization. To learn more about the College of Agriculture's biotechnology programs, please call Colin Kaltenbach, Vice Dean and Director of the Agricultural Experiment Station at 520-621-7201; Fax: 520-621-7196.

NEXT MONTH: Tuskegee University's School of Agriculture

APPROVAL PENDING FOR NEW BIOINSECTICIDE

American Cyanamid Company, Princeton, NJ, is anticipating EPA (Environmental Protection Agency) approval to conduct two small field tests of a new genetically altered baculovirus bioinsecticide that has been shown to be non-toxic to humans, animals, and the environment.

Baculoviruses are naturally occurring, insect-specific pathogens and take about 4-5 days to stop an insect from feeding. This bioinsecticide is designed to control cabbage loopers, tobacco budworms, and other crop destroying caterpillars. For more details, please call Patricia Flaschetti at 201-831-3877.

SEE YOU IN SASKATOON IN '96

"Ag Biotech: Foundation for the Future" is the theme of an international conference to be held in Saskatoon, Saskatchewan, Canada, June 11-14, 1996. The meeting will be geared to developers of new concepts and products, managers of business and market development, customers, policy makers, investors, and intellectual property specialists. The meeting will be hosted by Ag West Biotechnology Inc. For more information, please call Murray McLaughlin at 306-975-1939; Fax: 306-975-1966.

CONSUMER OPINION OF BIOTECHNOLOGY: A MIXED BAG

In a study conducted by a Canadian firm, Optima Consultants, for the Consumer Policy Branch of Industry Canada, consumers expressed both positive and negative views about biotechnology. On the one hand they are optimistic about its potential benefits yet still skeptical because of previous mishaps of technology. They feel biotechnology products should be regulated by the government and labeled. To receive a copy of the report, please call 613-954-5716; Fax: 613-954-6436.

COURSE ON FERMENTATION TECHNOLOGY

The Massachusetts Institute of Technology is offering a course this summer on fermentation technology from July 31-August 4. The course includes lectures on growth and metabolism, recombinant DNA in biotechnology, bioreactor design and configurations, modeling, and other topics. For more details, please call 617-253-2101; Fax: 617-253-8042; E-mail: summer-professional-programs@mit.edu

BIO-FLOWERS?

Recombinant carnations will be test marketed in Australia later this year, according to an article in the May issue of *The AgBiotech Bulletin*. According to Florigene (formerly Calgene Pacific), the new carnation will last twice as long as conventional varieties. In addition to carnations, the company is looking at genetic modifications to chrysanthemums and the production of a blue rose.

NSTC BIOTECH RESEARCH SUBCOMMITTEE

The Biotechnology Research Subcommittee (BRS), a government-wide subcommittee of the Committee on Fundamental Science Research of the National Science and Technology Council (NSTC), recently completed a report entitled *Biotechnology for the 21st Century: New Horizons*. The BRS report discusses research opportunities in

agriculture, the environment, manufacturing/bioprocessing, marine biotechnology, and aquaculture. It is due to be released this month. The BRS may explore research opportunities in bioremediation, biocatalysis, and other areas next year. To receive a copy of the report, please send a request by fax to 202-720-5336.

A PHAR-OAH AMOUNT OF SCIENCE

More than 10,000 researchers and 20,000 extension specialists are working in the Agricultural Research Center in Egypt, according to Alvin Young, USDA/OAB Director, who recently visited four of the Centers' research institutions. Ag research in Egypt is supported by the government with strong support from many international organizations. Among the major foreign sponsors are the United States, the European Union, Canada, Japan, the United Nations Development Program, and the Food and Agriculture Organization. The United States has invested \$217 million over 10 years through the National Agricultural Research Program, a jointly funded program between the United States and Egypt.

The Agricultural Research Center represents the principal agency within the Ministry of Agriculture and Land Reclamation responsible for technology generation and transfer to Egyptian agriculture. It is comprised of 16 research institutes, 5 central laboratories, 46 experimental research stations, and more than 2,500 Ph.D. researchers.

At the Central Laboratory for Aquaculture Research in Abbassa, 56 researchers have access to over 150 ponds of different types and sizes. The Center houses state-of-the-art laboratories for conducting various research, extension and training activities. Current projects include isolating genes for stress, cold tolerance, and growth.

IN CASE YOU WEREN'T THERE

- Daniel Jones, OAB Deputy Director, presented a paper on USDA's role in the development of functional foods at a conference on functional foods for health, May 23, in Itasca, Illinois. The conference was sponsored by the University of Illinois. Jones said the development of functional foods for health represents "an important opportunity to improve the health and well-being of vast numbers of people worldwide." He said scientific research in this arena is crucial to providing consumers healthy foods. USDA, noted Jones, funds research in nutrition, food safety, and health. A few of the research areas include the bioavailability of nutrients, nutrient requirements of individuals across all age groups, and the relationship between diet and health. Biotechnology is one way to produce functional foods, and this method may be favored by producers because it

is fast and accurate, said Jones. He also noted that public reluctance to accept genetic engineering of foods may delay the acceptance of such foods. To receive a copy of Jones's talk, please send a request by fax to 202-720-5336.

- "The challenge is to recognize that research and development can impact our health, health care costs, and the agricultural production systems that provide for a sustainable future," said OAB Director Alvin Young at the conference, "Nutrition and Health: Friends or Enemies?", May 22-24, in Saint Vincent, Italy. Young described U.S. science policy that supports research and development and the current research on applying the new technologies (e.g., biotechnology) to enhance the nutritional quality and content of our agronomic products. To receive a copy of his presentation, please send a request by fax to 202-720-5336.
- Margriet Caswell, USDA/Economic Research Service economist, discussed the importance of intellectual property rights in the context of biotechnology and international organizations at the "5th Annual Symposium of the Pennsylvania Biotechnology Association." Betsey Wright, Executive Vice President of the Wexler Group, said there is a lack of national commitment to science. Other presenters emphasized adjustments the biotech industry may need to make to be profitable in light of international competition and public concerns about the technology. Others stressed the need for continued public support of basic research and the use of technology transfer agreements. To receive a copy of Caswell's presentation, please call 202-219-0434; Fax: 202-501-6174.

NEW PUBLICATIONS

- Minnesota Biotechnology Association Directory. To receive a copy, please call James Woodman at 612-227-5895; Fax: 612-698-0072.
- New Developments in Marine Biotechnology. Published September 1994 by Business Communications Company Inc., Norwalk, CT. To order, please call 203-853-4266; Fax: 203-853-0348.

UPCOMING MEETINGS

June 6-8: The 7th Symposium on Environmental Releases of Biotechnology Products: Risk Assessment Methods and Research Progress. Pensacola, FL. Co-sponsored by EPA, USDA, and Environment Canada. Meeting free of charge. For more details, please call James Harvey at 904-934-9237; Fax: 904-934-9388.

June 10-13: "Value-Added Cereals Through Biotechnology" Saskatoon, Saskatchewan, Canada. For details please call Rosemarie Gallays at 306-975-5571; Fax: 306-975-4839.

June 11-15: Sixth International Conference on Biotechnology in the Pulp and Paper Industry. Vienna, Austria. Call +43-1-4080059; Fax: +43-1-4022030.

June 19-30: Advances in Molecular Genetics. Madison, WI. An international course in recombinant DNA. Co-sponsored by BioPharmaceutical Technology Center Institute and the University of Wisconsin. For details, please call 608-273-9737; Fax: 608-273-6992; E-mail: kborgh@promega.com

June 23: Food Animal Biotechnology Center (FABCenter) Symposium '95. St. Paul, MN. For details, please call 612-624-7279; Fax: 612-624-7284.

June 23-26: "Biotech China '95." Beijing, China Contact Mr. Limin Jin, Beijing Yuanping Biotech Co. Ltd., No. 2 Bldg., 4 Yongding Road, Haidian District, Beijing 100039, PR China.

June 26: Meeting of USDA's ABRAC. Rosslyn, VA. To receive a copy of the draft agenda, please send a fax to 202-720-5336.

July 29-Aug. 2: Annual Meeting of the American Society of Plant Physiologists. Charlotte, NC. Call Sharon Kelly at 301-251-0560; Fax: 301-279-2996; E-mail: skelly@aspp.org

Aug. 6-11: Annual Meeting of the Society for Industrial Microbiology. San Jose, CA. Call 703-691-3357.

Aug. 24-25: Biotech Patent Forum. To be held the first day in Rockville, MD and the second day in Washington, DC. Sponsored by the American Type Culture Collection. For more details, please call 301-231-5566.

Oct. 1-4: International Symposium on "Engineering Plants for Commercial Products/Applications." Lexington, KY. Sponsored by the University of Kentucky. For details, please call 606-257-3929; Fax: 606-323-1053; E-mail: monica.stoch@ukwang.uky.edu

Oct. 16-20: Biotechnology Colloquium. Saskatoon, Saskatchewan, Canada. The colloquium is part of the North American Plant Protection Organization Annual Meeting. Sponsors include Agriculture and Agri-Food Canada and Ag-West Biotech Inc. For more details, please call Jane Thibert at 613-952-8000; Fax: 613-952-0809.

Oct. 16-20: Biotechnology Colloquium. Saskatoon, Saskatchewan, Canada. The colloquium is part of the North American Plant Protection Organization Annual Meeting. Sponsors include Agriculture and Agri-Food Canada and Ag-West Biotech Inc. For more details, please call Jane Thibert at 613-952-8000; Fax: 613-952-0809.

Oct. 25-28: "Louis Pasteur and Industry in the 21st Century." Marnes-la-Coquette, France. For details, please write to Institut Pasteur, Anne Bellod, 28 rue de Dr Roux, 75724, Paris Cedex 15; or call 33-1-4061-3380; Fax: 33-1-4061-3381.

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